

## ***Hakea chromatropa* (Proteaceae: Grevilleoideae), an apparently rare new species from Western Australia**

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### **Abstract**

George, A.S. & Barker, R.M. *Hakea chromatropa* (Proteaceae: Grevilleoideae), an apparently rare new species from Western Australia. *Nuytsia* 17: 159–164 (2007). A new species from the agricultural region of Western Australia, *Hakea chromatropa* A.S.George & R.M.Barker, is described. It is closely related to *H. ilicifolia* R.Br.

### **Introduction**

The genus *Hakea* Schrad. has been treated recently by Barker *et al.* (1999). Given the Australia-wide distribution of the genus and continued botanical exploration, including in areas previously unexplored or little-known, it is to be expected that new taxa will be found for some years yet. Such is the species described here. Although first collected in 1969 and again in 1990, the specimens were in fruit only and it was not until flowering material was found in 2006 that the distinction from related taxa became evident. What is surprising, perhaps, is its discovery in a region settled within two decades of the establishment of the colony of Western Australia in 1829, and no more than 50 kilometres from the property where James Drummond, the State's most prolific early plant collector, lived from 1838.

### **Methods**

The description is based on dried herbarium specimens and field work by the first author. The terminology follows that of Barker *et al.* (1999). Specific localities have been withheld from cited specimens due to conservation concerns. The distribution map was produced from PERTH specimen locality data, using DIVA-GIS freeware Version 5.2.0.2.

### **Taxonomy**

***Hakea chromatropa* A.S.George & R.M.Barker, *sp. nov.***

Ab *Hakea ilicifolia* R.Br. habitu non-lignotubero, non-corymboso; foliis concavis serratis; floribus majoribus, cremeis deinde roseis, non-odoratis; et seminibus majoribus, differt.

*Typus*: west of Wongan Hills, Western Australia [precise locality withheld for conservation purposes], 21 August 2006, A.S. George 17742 (*holo*: PERTH 07418086; *iso*: AD, CANB, K).

*Hakea ilicifolia* auct. non R.Br., Barker *et al.*, Fl. Australia 17B: 119 (1999) *p.p.*, only with respect to *H. Demarz* 1338 from Bolgart.

*Hakea serrata* R.M.Barker & A.S.George ms, in FloraBase, <http://florabase.dec.wa.gov.au> [accessed July 2007].

Bushy *shrub* to 2.5 m tall and 2 m wide, without lignotuber. *Bark* finely fissured. *Branchlets* tomentose with short, basally forked hairs and scattered longer simple hairs. *Leaves* rigid, obovate, 18–55 mm long, 8–20 mm wide (including teeth), markedly concave and recurved towards apex, pungently acute, serrate with 1–5 teeth on each margin (occasionally entire), appressed-tomentose with bifurcate hairs, glabrescent; lower leaves to 80 mm long with shorter teeth. *Inflorescence* axillary, almost sessile; rachis 3–4 mm long, villous with white hairs; 1 or 2 vegetative shoots arising from peduncle at flowering time with mainly white hairs and few rusty hairs. *Bracts* ovate, very concave, appressed-hirsute, the outermost 1.5 mm long, grading to the innermost that are narrowed towards base and *c.* 9 mm long, caducous. *Flowers* *c.* 20–26, glabrous, not scented. *Pedicels* 4–7 mm long. *Perianth* 4–4.5 mm long, creamy white turning deep pink with age; limb recurved in bud, broadly elliptic, 1.1–1.2 mm long. *Pistil* 6–7 mm long; pollen presenter conical, 0.6–0.7 mm long, the apex glandular, base widely flared, very finely fringed; ovary sessile, papillose; gland absent. *Fruit* almost sessile, broadly ovoid, somewhat gibbous on lower side, 20–24 mm long, 10–13 mm wide, with scattered pustules or ridges, splitting fully to base; horns stout, turned upwards, 3–4 mm long. *Seed* along upper side of follicle, obliquely obovate, 14–16 mm long, 4–5 mm wide; seed body 6–8 mm long, very convex and rugose on inner face; wing extending down one side almost to base of seed body. (Figures 1, 2)

*Other collections examined*. WESTERNAUSTRALIA: 2 July 1969, *H. Demarz* 1338 (KPBG); 2 Oct. 2006, A.S. George 17743 (PERTH); 14 Nov. 1990, E.A. Griffin 6143 (PERTH).

*Distribution*. Western Australia, recorded from four localities in the northern Jarrah Forest and north-western Avon Wheatbelt regions (IBRA 6.1; Department of the Environment and Water Resources 2007), in the South-West Botanical Province of Western Australia (Figure 3).

*Habitat*. Grows in gravelly loam, in open shrubland with scattered mallee eucalypts, or in *Eucalyptus wandoo* open woodland.

*Flowering period*. July to early October.

*Conservation status*. Recently listed as Priority One under the Department of Environment and Conservation's Flora Conservation Codes, as *H. serrata* R.M.Barker & A.S.George ms. The populations near Bolgart and Mogumber are on private property; their current status is unknown.

*Etymology*. From the Greek *chroma* (colour) and *trope* (a turning), in reference to the flowers that change colour as they age.

*Affinities*. *Hakea chromatropa* is closely related to *H. ilicifolia* R.Br., which occurs along and near the south coast of Western Australia between Albany and Lucky Bay (east of Esperance) and inland

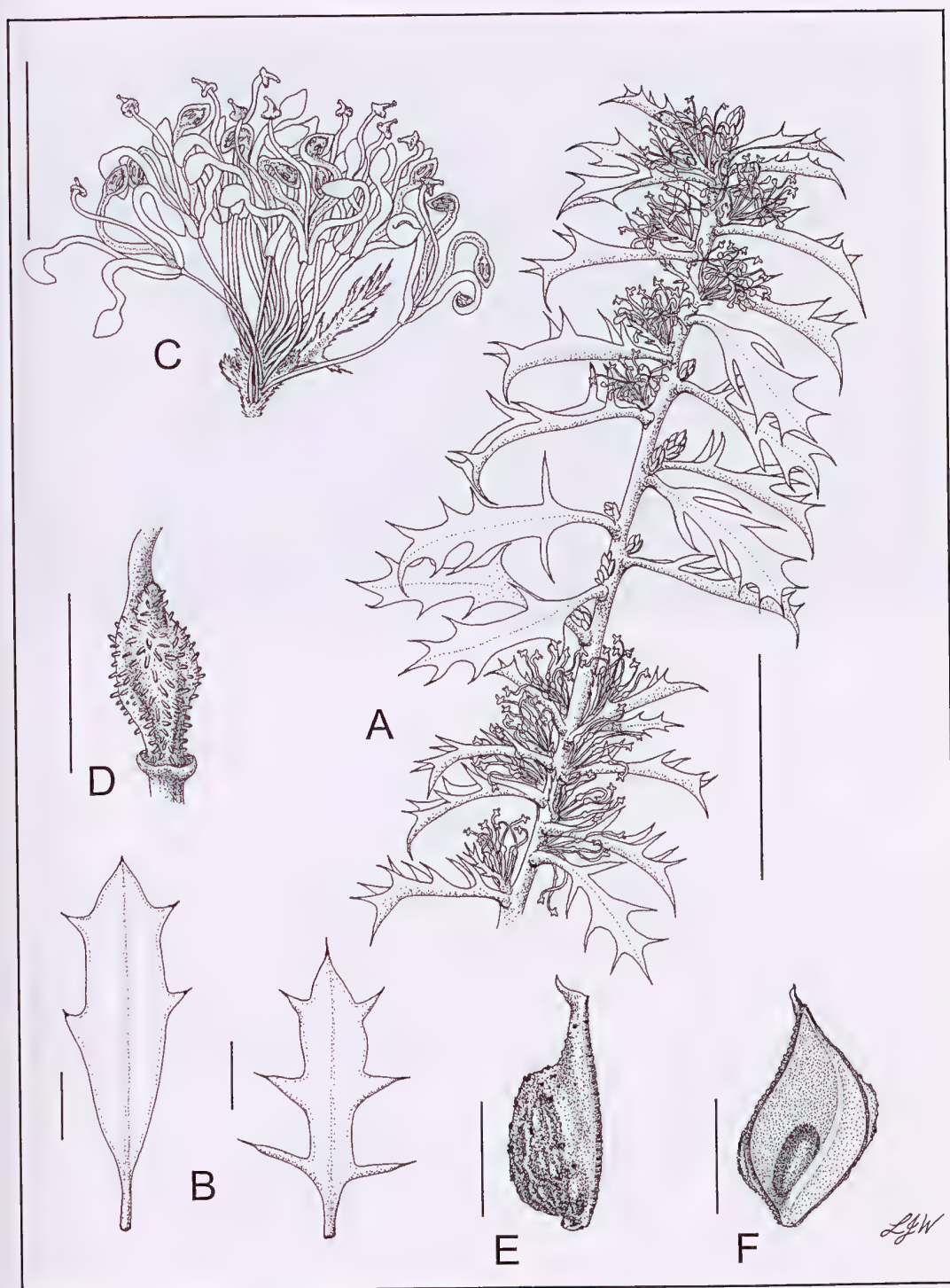


Figure 1. *Hakea chromatropa*. A – flowering branchlet; B – leaves; C – inflorescence; D – ovary and torus; E – one valve of a follicle from side; F – one valve of a follicle, inner face. All from A.S. George 17742. Drawn by Lisa Waters. Scale bars = 50 mm (A); 9 mm (C); 1 mm (D) and 10 mm (B, E, F).



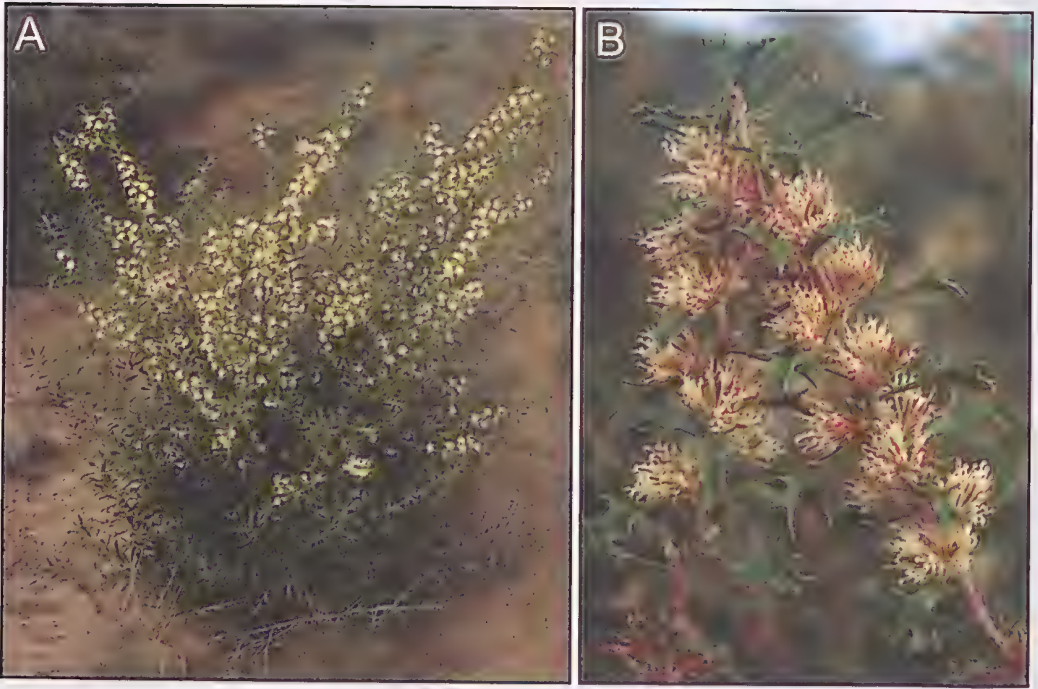


Figure 2. *Hakea chromatropa* at the type locality, 21 August 2006. A – habit; B – flowers. Photographs: A.S. George.

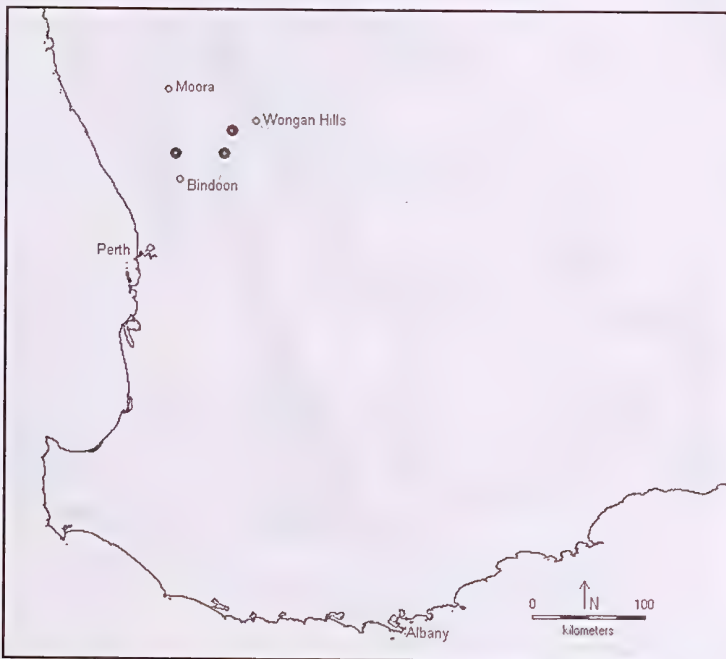


Figure 3. Distribution of *Hakea chromatropa* in south-west Western Australia.

to Lake Grace. It differs from that species in its non-lignotuberous habit (lignotuberous or suckering with a corymbose habit in *H. ilicifolia*), wider floral bracts, slightly larger flowers and seeds, and flowers that change colour as they age. The hairs on the rachis and the young shoots that arise from the inflorescence at flowering are predominantly white, whereas in *H. ilicifolia* they are predominantly rust-coloured.

The distinctive leaf shape of this species is shared by specimens recorded by Barker *et al.* (1999) as having characteristics intermediate between *H. ilicifolia* and *H. horrida* R.M.Barker, e.g. *H. Demarz* 482 from the Fitzgerald River, *W.E. Blackall* 3089 from between Pingrup and Lake Magenta, and *A.S. George* 10932 from the Fitzgerald River National Park (all at PERTH). It is also shown in W. Hooker's illustration (1842: t. 445) of *H. intermedia* Hook. from King George Sound.

*Discussion.* The recognition of this species highlights yet again the very localised nature of many taxa in the flora of south-western Australia. At the type locality there is a population of 22 plants on narrow road verges, with three more plants several hundred metres away, in a region that has been largely cleared for agriculture. Just over a kilometre away is another population, of 19 plants, also on narrow verges. The presence of these plants, which have a non-lignotuberous habit, indicates that these verges have not been frequently burned or disturbed, showing that rare species can survive in such a situation. Another collection appears to be from a population no longer extant, while another population is on private property.

### Acknowledgements

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